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EXAMINER

LE, DUY K

ART UNIT	PAPER NUMBER
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2685

9

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/812,077

Applicant(s)

HILTUNEN, KARI

Examiner

Duy K Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on June 29, 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Z</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because Figure 2 is a copy of a photograph and is not of sufficient quality. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4-7, and 10-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Halteren et al. (U.S. Patent 6,324,907).

As to claim 1, the Halteren reference discloses method for providing a sensor system in a communication device (see Abstract) comprising the steps of:

providing an electromechanical dielectric (EMD) film (40, Figures 1, 2A-2B) integral with the surface of the cover of the communication device; providing one or more voided areas (30, Figure 1) in the outer surface regions in the cover for accessing the EMD film wherein the voided area corresponds to the operational function to be implemented; and coupling the EMD

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film in each of the exposed regions to electronic circuit means (61, 62, Figures 2A-2B) associated with the corresponding operational function of the communication device. ("the flexible member is used to convey electrical signals generated by the transducer system to the exposed parts located at the first end of the member. The exposed parts [are] connectable to corresponding terminals of the piece of electronic equipment employing the flexible substrate transducer assembly. If the transducer system comprises a microphone or a miniature loudspeaker (receiver, in hearing instrument terminology), the one or several holes in the flexible elongate member function as sound pressure inlet or outlet port(s) so that sound pressure is conveyed between the external environment and the transducer system" (Col. 3, lines 32-43). See also Figures 2A, 2B, 3A-3C, and 4; Col. 7, lines 45-57, Col. 8, lines 10-16, and 29-45)).

As to claim 2, the Halteren reference discloses the method as defined in claim 1, wherein the step of providing one or more voided areas in the outer surface region includes providing one or more voided areas in the inner surface region of the cover in those areas where the EMD film requires unobstructed movement to perform the desired operational function of transforming an acoustic energy signal to a corresponding electrical signal and transforming an electrical signal to a corresponding acoustic signal ("if the transducer system comprises a microphone or a miniature loudspeaker (receiver, in hearing instrument terminology), the one or several holes in the flexible elongate member function as sound pressure inlet or outlet port(s) so that sound pressure is conveyed between the external environment and the transducer system" (Col. 3, lines 37-43). See also Figures 2A, 2B, 3A-3C, and 4; Col. 7, lines 45-57, Col. 8, lines 10-16, and 29-45)).

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As to claim 4, the Halteren reference discloses the method as defined in claim 1, wherein the step of providing the EMD film integral with the surface of the cover includes the step of injection molding the cover with the EMD film ("in the present specification, the term "lid" designates various forms of covers, casings and housings that are capable of providing the shielding from the external environment" (Col. 2, lines 57-60). "The lid may be fabricated in a metal by the use of a moulding process" (Col. 3, lines 66-67)).

As to claim 5, the Halteren reference discloses a communication device (see Abstract) comprising:

an electromechanical dielectric (EMD) film coextensive with at least a portion of the surface of a cover of the communication device; one or more voided areas in the outer surface regions in the cover for accessing a portion of the EMD film wherein a given voided area in the surface of the cover corresponds to the operational function to be implemented; electronic circuit means coupled to the EMD film for sensing electrical signals generated by the EMD film in response to exposure to a force and for displacing the surface of the EMD film with respect to a plane passing through and coextensive with the surface in response to electrical signals generated by the electronic circuit means ("the flexible member is used to convey electrical signals generated by the transducer system to the exposed parts located at the first end of the member. The exposed parts [are] connectable to corresponding terminals of the piece of electronic equipment employing the flexible substrate transducer assembly. If the transducer system comprises a microphone or a miniature loudspeaker (receiver, in hearing instrument terminology), the one or several holes in the flexible elongate member function as sound pressure inlet or outlet port(s) so that sound pressure is conveyed between the external

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environment and the transducer system” (Col. 3, lines 32-43). See also Figures 2A, 2B, 3A-3C, and 4; Col. 7, lines 45-57, Col. 8, lines 10-16, and 29-45)).

As to claims 6 and 7, the Halteren reference discloses a communication device as defined in claim 5, wherein the EMD film functions as a speaker and a microphone (“if the transducer system comprises a microphone or a miniature loudspeaker (receiver, in hearing instrument terminology), the one or several holes in the flexible elongate member function as sound pressure inlet or outlet port(s) so that sound pressure is conveyed between the external environment and the transducer system” (Col. 3, lines 37-43)).

As to claim 10, the Halteren reference discloses a portable, handheld communication device of the type having means for establishing a communication link between itself and a remote communication device (see Abstract) comprising:

a case having at least a first portion molded from material responsive to displacement for generating an electric signal; and at least a second portion molded from material responsive to electric signals for displacement of said material proportional to the magnitude of the electrical signal (“the flexible member is used to convey electrical signals generated by the transducer system to the exposed parts located at the first end of the member. The exposed parts [are] connectable to corresponding terminals of the piece of electronic equipment employing the flexible substrate transducer assembly. If the transducer system comprises a microphone or a miniature loudspeaker (receiver, in hearing instrument terminology), the one or several holes in the flexible elongate member function as sound pressure inlet or outlet port(s) so that sound pressure is conveyed between the external environment and the transducer system” (Col. 3, lines

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32-43). See also Figures 2A, 2B, 3A-3C, and 4; Col. 6, lines 5-21, Col. 7, lines 45-57, Col. 8, lines 10-16, and 29-45)).

As to claim 11, the Halteren reference discloses a portable, handheld communication device as defined in claim 10, wherein said first portion and said second portion are molded from electromechanical dielectric (EMD) film, said EMD film being coextensive with at least a portion of the surface of said case (see Figures 2A, 2B, 3A-3C, and 4; Col. 3, lines 32-43, Col. 6, lines 5-21, Col. 7, lines 45-57, Col. 8, lines 10-16, and 29-45). The flexible member is functionally equivalent to an EMD film).

3. Claims 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ojala et al. (U.S. Patent 5,917,437).

As to claim 14, the Ojala reference discloses a method for providing a touch sensitive surface functionality in a communication device ("a keyboard according to this invention can be applied to many different purposes" (Col. 2, lines 32-33). See also Abstract. It is inherent that the keyboard of this invention can be applied to a communication device) comprising the steps of:

providing an electromechanical dielectric (EMD) film (EMF 11) with a first major surface having adhesion properties; placing said first adhesion major surface in contact with a desired location of a surface of the communication device; and coupling the EMD film to electronic circuit means (12) associated with the corresponding operational function of the communication device ("in FIG. 2 the lowest layer of the keyboard structure consists of EMF 11 which has a circuit pattern 12 screened on its upper surface to form electrodes of a membrane switch. An insulating layer 13 is on top of the film and a cover plate 14 is on top of the insulating layer. According to this invention, the cover plate may be a stiff, solid plate which covers the

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whole keyboard. When a key, an area on the cover plate, is pressed, the force causes a sufficient change in the thickness of the film to produce a signal” (Col. 3, lines 22-30). See also Figures 7-8 and Col. 4, lines 6-20)).

As to claim 15, the Ojala reference discloses the method as defined in claim 14, further including the steps of:

providing an EMD film with a second major surface disposed opposite said first major surface, said second major surface having adhesion properties; and locating the EMD film between the cover of the device and a display screen of the device, whereby the EMD film holds the display in place to provide a touch sensitive screen (“one possibility is to place the EMF construction behind a liquid crystal display so that the cover plate includes an LCD device. This provides a way to realize a simple, functional touch-sensitive display” (Col. 4, lines 55-58)).

As to claim 16, the Ojala reference discloses the method as defined in claim 14, further including the steps of:

providing an EMD film with a second major surface disposed opposite said first major surface; providing a flexible protective layer on said second major surface; and attaching the adhesion major surface of the EMD film to a desired location on the surface of the device, whereby the protective layer faces outward for touching contact by a user (see Figure 3 and Col. 3, lines 40-47).

As to claim 17, the Ojala reference discloses a communication device having touch sensitive surface functionality (“a keyboard according to this invention can be applied to many different purposes” (Col. 2, lines 32-33). See also Abstract. It is inherent that the keyboard of this invention can be applied to a communication device) comprising:

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an electromechanical dielectric (EMD) film (EMF 11) with a first major surface having adhesion properties and a second major surface oppositely disposed said first major surface, whereby said adhesion major surface holds said EMD film in contact with a desired location on the surface of the communication device; and means (12) for coupling said EMD film to electronic circuit means associated with the corresponding operational function of the communication device ("in FIG. 2 the lowest layer of the keyboard structure consists of EMF 11 which has a circuit pattern 12 screened on its upper surface to form electrodes of a membrane switch. An insulating layer 13 is on top of the film and a cover plate 14 is on top of the insulating layer. According to this invention, the cover plate may be a stiff, solid plate which covers the whole keyboard. When a key, an area on the cover plate, is pressed, the force causes a sufficient change in the thickness of the film to produce a signal" (Col. 3, lines 22-30). See also Figures 7-8 and Col. 4, lines 6-20)).

As to claim 18, the Ojala reference discloses a communication device as defined in claim 17, further comprising:

said EMD film second major surface having adhesion properties; and a display in contact with and held by said EMD film second major surface ("one possibility is to place the EMF construction behind a liquid crystal display so that the cover plate includes an LCD device. This provides a way to realize a simple, functional touch-sensitive display" (Col. 4, lines 55-58)).

As to claim 19, the Ojala reference discloses a communication device as defined in claim 17, further comprising a said EMD film second major surface having a flexible protective layer (see Figure 3 and Col. 3, lines 40-47).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,324,907 to Halteren et al. in view of Ojala et al. (U.S. Patent 5,917,437).

As to claim 3, the Halteren reference discloses the method as defined in claim 1.

However, it does not disclose the step of providing a display in one of the voided areas with the rear surface of the display facing and in contact with the EMD film. The Ojala reference teaches the step of providing a display in one of the voided areas with the rear surface of the display facing and in contact with the EMD film ("one possibility is to place the EMF construction behind a liquid crystal display so that the cover plate includes an LCD device. This provides a way to realize a simple, functional touch-sensitive display" (Col. 4, lines 55-58)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Halteren to further include the step of providing a display in one of the voided areas with the rear surface of the display facing and in contact with the EMD film, as taught by Ojala, in order to realize a simple, functional touch-sensitive display.

As to claim 8, the Halteren reference discloses a communication device as defined in claim 5. However, it does not disclose the EMD film functions as a keypad. The Ojala reference discloses "a keyboard according to the present invention, which includes one or more keys and corresponding electromechanical converting elements, is characterized in that it includes a film

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construction (42) which includes an electret film with a bubble construction known as EMF by which said electromechanical converting elements corresponding to the keys are formed” (Abstract, lines 1-7)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Halteren wherein the EMD film functions as a keypad, as taught by Ojala, in order to realize a lightweight keypad.

As to claim 9, the Halteren reference discloses a communication device as defined in claim 5. However, it does not disclose a display in contact with the EMD film whereby the EMD film is responsive to sensing a direction of touching on the surface of the display. The Ojala reference discloses “one possibility is to place the EMF construction behind a liquid crystal display so that the cover plate includes an LCD device. This provides a way to realize a simple, functional touch-sensitive display” (Col. 4, lines 55-58).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Halteren to further comprise a display in contact with the EMD film whereby the EMD film is responsive to sensing a direction of touching on the surface of the display, as taught by Ojala, in order to realize a simple, functional touch-sensitive display.

6. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,324,907 to Halteren et al. in view of Lane (U.S. Patent 5,623,552).

As to claim 12, the Halteren reference discloses a portable, handheld communication device as defined in claim 11. However, it does not disclose security means for controlling access to said device and limiting call completion to an authorized user. The Lane reference

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teaches security means for controlling access to said device and limiting call completion to an authorized user (see Col. 5, line 6 to Col. 6, line 44).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Halteren to further include security means for controlling access to said device and limiting call completion to an authorized user, as taught by Lane, in order to verify and authorize an approved user.

As to claim 13, Halteren-Lane discloses a portable, handheld communication device as defined in claim 12 wherein said security means further includes at least a portion of said EMD film configured as a fingerprint recognition sensor (Lane; "a fingerprint sensor 102 as disclosed herein can be fabricated by well known thin film deposition and patterning techniques" (Col. 7, lines 9-11)).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Whitehead et al. (U.S. Patent 4,885,783) discloses elastomer membrane enhanced electrostatic transducer.
- b. Kirjavainen et al. (U.S. Patent Application Publication 2001/0024712 A1) discloses dielectric cellular electret film and procedure for its manufacture.
- c. Lai et al. (U.S. Patent Application Publication 2002/0110465 A1) discloses construction of touch screen.
- d. Van Ketwich (U.S. Patent 6,072,475) discloses touch screen.

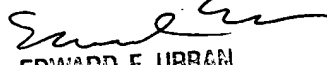
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- e. Loeppert et al. (U.S. Patent 5,740,261) discloses miniature silicon condenser microphone.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy K Le whose telephone number is 703-305-5660. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F Urban can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Duy Le
March 15, 2004


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